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10/066,340	01/31/2002	Roger Stettner	1900/017	9833
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GOTTLIEB RACKMAN & REISMAN PC			TANG, SON M	
270 MADISON AVENUE				
8TH FLOOR			ART UNIT	
NEW YORK, NY 100160601			PAPER NUMBER	
			2632	

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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In line 8 the word “**invention**” is indefinitely, because the whole claim itself is an invention.
3. Claim 1 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear of the claimed three separate “drive electronics” in lines 8, 17 and 18, It is confusing that are they the same or different components. And the claimed “data processor means ... sending control signals to drive electronics”, it is unclear of what is a functionality of a control signals do to the driver electronics? Nowhere in the specification that describes this limitation.
4. Claim 1 recites the limitation "said drive electronics" in line 10. There is insufficient antecedent basis for this limitation in the claim.
5. Claims 15-17 recite the limitation "the said circuit means" in line 3. There are insufficient antecedent basis for these limitations in the claims.
6. Claim 37 recites the limitation "said environmental sensor system" in line 3. There is insufficient antecedent basis for this limitation in the claim.

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7. Claim 50 recites the limitation "said electromagnetic signal is a microwave signal" in line 3.
3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-17, 21-27 and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuhara et al. [US 5,471,215; Fukuhara].

Regarding claim 1: Fukuhara discloses a device for warning an operator of a stationary or moving vehicle of potential collisions with objects in his physical environment (car collision alarm device, see col. 1, line 8) comprising:

-operator communication means (display CRT) for transmitting collision information such as target distance to said operator (see Fig. 13, col. 11, lines 44-45, col. 16, lines 44-46 and col. 1, lines 7-8);

-optical pulse signal transmitter (5a); for transmitting a laser pulse to said object, the laser pulse that inherently has a power value to transmit pulse signal such a way that optical light is able to perform transmission as intended for object detection;

-laser detector means (8b-8c) for detecting an emission of the laser pulse from (8a) and transferring a signal representative of that information to a drive electronics (8d) [see Fig. 2];

-signal receiving means (5b) including analog circuitry (5b3-5b4, and 6b) for sampling and capturing all or portion of the laser pulse shape [see Fig. 1-2];

-output electronics means (6) for conditioning by performing the sampling received data; and transferring said data,

-data processor means (Fig. 11) for receiving said conditioned data, storing the data, computing parameters indicative of potential collisions (alarm) to an operator communication (display CRT) at step 144 (see Fig. 13);

-drive electronics (8d) (sampling pulse generator) for controlling the timing and biasing of said signal transmitter and signal receiver at the output electronics (6) [as shown in Fig. 2, col. 6, lines 31-38], Fukuhara does not specifically show that the sampling unit and decision unit sending control signals to drive electronics (8b), however Fukuhara shows that the connection between decision unit 7 and controller 8, see Fig. 2. Therefore, it would have been obvious of one having ordinary skill in the art to recognize that there is a communication between decision unit 7 and drive electronics 8b.

Fukuhara does not specifically disclose that the optics means concentrates the laser in a solid angle consistent with the power value of the laser and useful range. As is shown in Fig. 2 an optical transmitter has a lens 5a-3 in front of diode 5a-2, whereby a solid angle is dependent on a gap between the lens and the diode, e.g. the further apart from the diode the wider angle with less light value and short detecting range and vice versa. Therefore, it would have been obvious of one having ordinary skill in the art at the time of the claimed invention that the lens in Fukuhara concentrates the laser light in a solid angle consistent with the power value of the laser and useful range of detection, so that object detection in the collision avoidance system performs as intended.

Regarding claim 15: Fukuhara discloses an analog data indicative of the flight time (delay time) of a laser pulse to a portion of an object and back to the device [see col. 6, lines 50-55].

Regarding claims 16-17: Fukuhara disclose all the limitations as described above, except for not specifically disclose wherein the circuit means for developing data indicative of the flight time of a laser pulse is a Schmitt Trigger circuitry, Transimpedance Amplifier circuitry. Since, those electronic components are known in the art of collision warning environment, therefore, it would have been obvious of one having ordinary skill in the art at the time the invention was made to employ any of those known component described above in the collision warning system in an appropriate manner.

Regarding claim 21: Fukuhara further discloses that the output electronics (6) includes a converter for converting received signal into binary signal [see col. 6, lines 52], thus, the A/D converter is inhered in the output electronics (6).

Regarding claim 22: Fukuhara further discloses that the output electronics means includes gain circuitry (met by limiter amplifier, Fig. 2) and offset correction circuitry (9c) Fig. 16.

Regarding claim 23: Fukuhara further discloses range calculations circuitry [see col. 11, line 41-45].

Regarding claims 24-25: Fukuhara disclose all the limitations as described above, except for not specifically disclose the time of impact calculations and collision avoidance decisions, however, Fukuhara would calculated the distance and the relative approaching speed to a target and displayed on CRT [col. 20, lines 49-53]. Therefore, it would have been obvious

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of one having ordinary skill in the art to at the time the invention was made to recognize that the system would have a circuit to calculate the time of impact and a collision avoidance decision based on the distance and speed to the target.

Regarding claim 26: The claimed “data processor means includes a digital computer” is inherently in the system, since the digital binary data is being processed in the sampler unit (6), memory unit, and decision unit 79 [as shown in Fig. 11].

Regarding claim 27: Fukuhara disclose software to calculate distance (range) to the target [see Fig. 13 and all the flow charts Figs. of the system].

Regarding claim 49: Fukuhara disclose all the limitations as described above, except for not specifically disclose that the signal receiver can process Doppler-shifted laser signals. Doppler-shifted laser signals is a well-known process in radar art, therefore, Examiner taken Official Notice that Doppler-shifted process is known in the art. It would have been obvious of one having ordinary skill in the art at the time the invention was made would use a known process such as Doppler-shifted in the system of Fukuhara, depend upon the desired of the system require.

Regarding claim 50: Fukukara disclose all the limitations as described above, except for not specifically disclose that the electromagnetic signal is a microwave signal. However, microwave signal is a known signal in the art and Fukukara further mention that the system can be applicable to other type of wave as alternative [see col. 24, lines 8-15]. Therefore, it would have been obvious of one having ordinary skill in the art would employ a known microwave signal in the system of Fukukara as an alternative used.

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3. Claims **28-32 and 37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuhara et al. in view of Breed et al. [US 2002/0005778; Breed].

Regarding claims 28-32: Fukuhara disclose all the limitations as described above, except for not specifically disclose a software to compute the time-of-impact, three-dimensional object recognition, collision-avoidance and minimum-damage, **Breed** teaches an optical radar system that comprises an appropriate software [¶ 0161] to compute three-dimensional object recognition [¶ 0128], a collision-avoidance generate by a collision warning system and minimum-damage generate by a steering wheel adjustable [see ¶ 0134] and time-of-impact (met by measured time correlates to distance between the vehicle and an object from the reflected signal [¶ 0131]. It would have been obvious of one having ordinary skill in the art at the time of the claimed invention to have the appropriate software to compute all the safety functions as taught by Breed into the system of Fukuhara, in order to increase safety to the driver.

Regarding claim 37: Fukuhara and Breed disclose all the limitations as described above, Breed further teaches an environmental sensor system means includes a coefficient of friction indicator met by an anticipatory sensor which sensing the presence of snow or fog [see ¶ 0117].

4. Claims 54-59 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Breed et al. [US 2002/0005778] in view of Leonard et al. [US 6,137,566] as rejection stated in the previous Office Action send 12/14/2004 for the reason of record.

Response to Arguments

5. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection. There is no argument to the method claims 54-59, the claims remained and considered as previous rejection. The claimed method steps are interpreted and rejected as rejection stated in the previous Office Action sent 12/14/2004.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Akasu [US 5,504,570], Nourcier et al. [US 6,842,231], Allen et al. [US 6,392,747], Juds et al. [US 6,377,167].

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

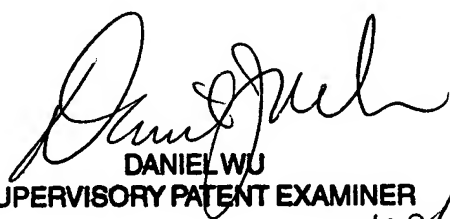
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son M. Tang whose telephone number is (571)272-2962. The examiner can normally be reached on 4/9 First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J. Wu can be reached on (571)272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Son Tang


DANIEL WU
SUPERVISORY PATENT EXAMINER
11/28/05